

Amendments to the Claims

Claims 1-18. (Withdrawn)

19. (Currently Amended) A substrate, comprising:

(i) a surface layer comprising gold, and

(ii) a plurality of moieties, on at least a portion of said surface layer,

wherein said moieties are alkanethiolate moieties of formula (5) or and enantiomers of the alkanethiolate moieties of formula (5):

Surf—S—L—Q—T (5);

-L- is $-(A_x-B_y-E_z-D)_w-$;

each A, B, E and D are individually $C(R_A R_A')$ -, $-C(R_B R_B')$ -, $-C(R_E R_E')$ -, and $-C(R_D R_D')$ -, respectively;

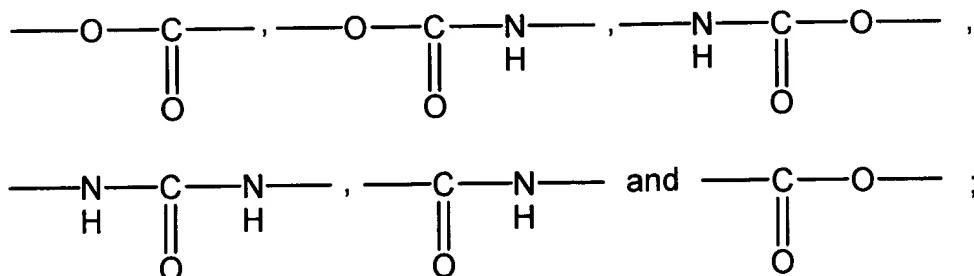
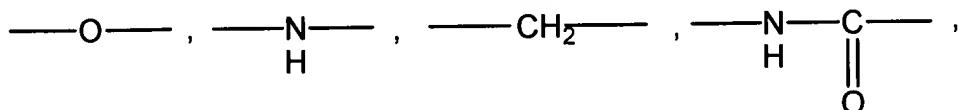
each R_A , R_B , R_E and R_D are individually H, or any two of R_A , R_B , R_E and R_D together form a bond, or R_A , R_B , R_E and R_D together with the atoms to which they are bonded form a six-membered aromatic ring;

each R_A' , R_B' , R_E' and R_D' are individually H, or any two of R_A' , R_B' , R_E' and R_D' together form a bond, or R_A' , R_B' , R_E' and R_D' together with the atoms to which they are bonded form a six-membered aromatic ring;

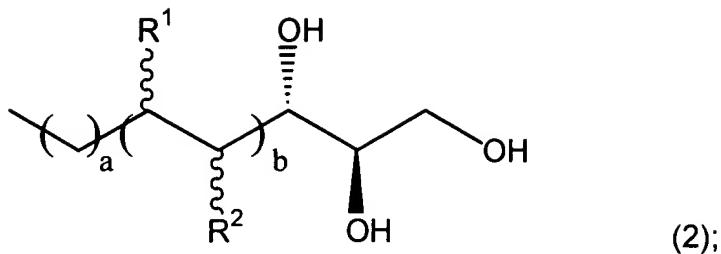
each x, y and z are individually either 0 or 1;

w is 1 to 5;

-Q- is selected from the group consisting of



-T is a moiety of formula (2)



B1
R¹ and R² are each individually selected from the group consisting of H and OH;

a is 0 to 3;

b is 0 to 3;

~~~~ indicates that the chirality of the carbon atom to which it is attached is either R or S; and

Surf designates where the moiety attaches to said surface.

20. (Original) The substrate of claim 19, further comprising:

(iii) a monolayer comprising said moieties,

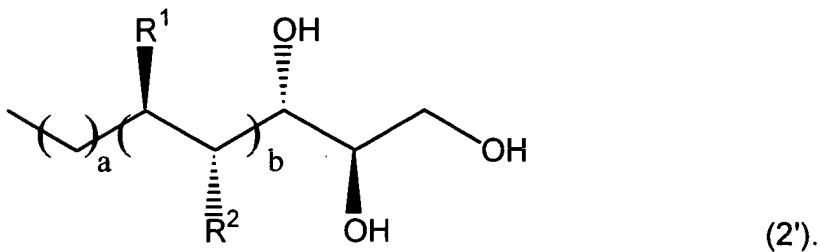
wherein said monolayer does not fail a cell patterning test at 12 days.

21. (Original) The substrate of claim 19, further comprising:

(iv) a base,

wherein said surface layer is on said base.

22. (Original) The substrate of claim 21, wherein -T is a moiety of formula (2')



23. (Original) The substrate of claim 22, wherein a is 1, b is 1 and at least one of R<sup>1</sup> and R<sup>2</sup> is OH.

24. (Original) The substrate of claim 22, wherein -L- contains 8 to 18 carbon atoms.

25. (Original) The substrate of claim 24, wherein -L- contains 1 or 0 double bonds, or 1 triple bond.

26. (Original) The substrate of claim 22, wherein -L- is an alkylene containing 6 to 18 carbon atoms.

27. (Original) The substrate of claim 22, wherein -Q- is -O- or -CH<sub>2</sub>-.

28. (Original) The substrate of claim 23, wherein -L- is an alkylene containing 6 to 18 carbon atoms, and -Q- is -O-.

29. (Original) A substrate, comprising:

- (i) a surface layer comprising gold, and
- (ii) a monolayer comprising moieties, on at least a portion of said surface layer,

wherein said moieties are alkanethiolate moieties; and  
said monolayer does not fail a cell patterning test at 12 days.

30. (Original) A cell chip, comprising:

- (A) the substrate of claim 19, and
- (B) cells, on said substrate.

31. (Original) A cell chip, comprising:

- (A) the substrate of claim 20, and
- (B) cells, on said substrate.

32. (Original) A cell chip, comprising:

- (A) the substrate of claim 22, and
- (B) cells, on said substrate.

33. (Original) A cell chip, comprising:  
(A) the substrate of claim 24, and  
(B) cells, on said substrate.

34. (Original) A cell chip, comprising:  
(A) the substrate of claim 26, and  
(B) cells, on said substrate.

35. (Original) A cell chip, comprising:  
(A) the substrate of claim 28, and  
(B) cells, on said substrate.

36. (Original) A cell chip, comprising:  
(A) the substrate of claim 29, and  
(B) cells, on said substrate.

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Claims 37-40. (Withdrawn)

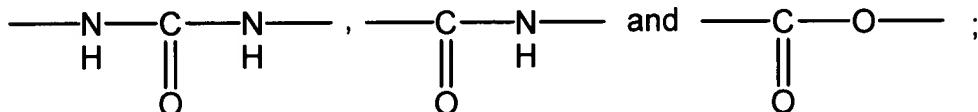
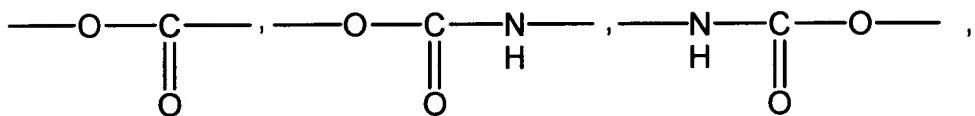
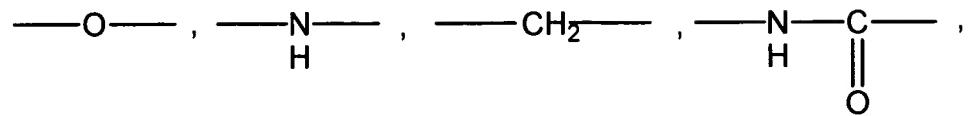
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41. (Currently Amended) A method of making a substrate, comprising  
contacting a surface with an alkanethiol of formula 1 or and the enantiomers  
enantiomers of formula (1);

HS—L—Q—T (1),

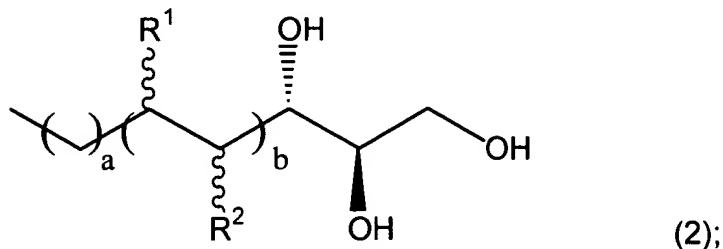
wherein -L- is -(A<sub>x</sub>-B<sub>y</sub>-E<sub>z</sub>-D)<sub>w</sub>;  
each A, B, E and D are individually C(R<sub>A</sub>R<sub>A</sub>'), -C(R<sub>B</sub>R<sub>B</sub>'), -C(R<sub>E</sub>R<sub>E</sub>'), and -C(R<sub>D</sub>R<sub>D</sub>'), respectively;  
each R<sub>A</sub>, R<sub>B</sub>, R<sub>E</sub> and R<sub>D</sub> are individually H, or any two of R<sub>A</sub>, R<sub>B</sub>, R<sub>E</sub> and R<sub>D</sub> together form a bond, or R<sub>A</sub>, R<sub>B</sub>, R<sub>E</sub> and R<sub>D</sub> together with the atoms to which they are bonded form a six-membered aromatic ring;  
each R<sub>A</sub>', R<sub>B</sub>', R<sub>E</sub>' and R<sub>D</sub>' are individually H, or any two of R<sub>A</sub>', R<sub>B</sub>', R<sub>E</sub>' and R<sub>D</sub>' together form a bond, or R<sub>A</sub>', R<sub>B</sub>', R<sub>E</sub>' and R<sub>D</sub>' together with the atoms to which they are bonded form a six-membered aromatic ring;  
each x, y and z are individually either 0 or 1;  
w is 1 to 5;

-Q- is selected from the group consisting of



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-T is a moiety of formula (2)



$\text{R}^1$  and  $\text{R}^2$  are each individually selected from the group consisting of H and OH;

a is 0 to 3;

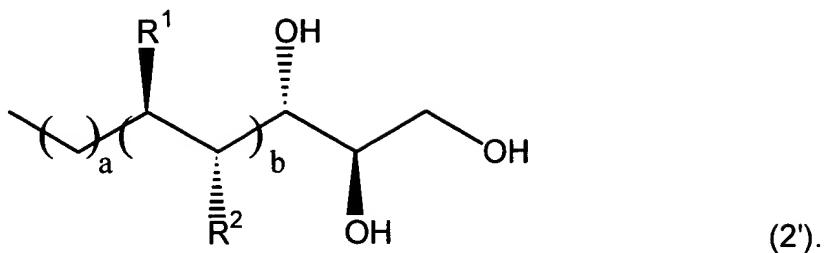
b is 0 to 3; and

~~~~~ indicates that the chirality of the carbon atom to which it is attached is either R or S;

wherein said surface comprises gold.

42. (Cancelled)

43. (Currently Amended) ~~The A method of claim 41, making a substrate, comprising contacting a surface with the alkanethiol of claim 2;~~
~~wherein said surface comprises gold~~ -T is a moiety of formula (2')



44. (Currently Amended) ~~The method of claim 43 making a substrate, comprising contacting a surface with the alkanethiol of claim 8;~~
wherein said surface comprises gold a is 1, b is 1, at least one of R^1 and R^2 is OH , -L- is an alkylene containing 6 to 18 carbon atoms, and -Q- is -O-.

Claims 45-48. (Withdrawn)

49. (Original) A method of making a cell chip, comprising:
contacting cells with the substrate of claim 19.

50. (Original) The method of claim 49, further comprising allowing said cells to proliferate.

51. (Original) A method of making a cell chip, comprising:
contacting cells with the substrate of claim 20.

52. (Original) The method of claim 51, further comprising allowing said cells to proliferate.

53. (Original) A method of making a cell chip, comprising:
contacting cells with the substrate of claim 22.

54. (Original) The method of claim 53, further comprising allowing said cells to proliferate.

55. (Original) A method of making a cell chip, comprising:
contacting cells with the substrate of claim 28.

56. (Original) The method of claim 55, further comprising allowing said cells

to proliferate.

57. (Original) A method of making a cell chip, comprising:
contacting cells with the substrate of claim 29.

58. (Original) The method of claim 57, further comprising allowing said cells
to proliferate.